

# RPO INVENTORY AND PRIORITIZATION TOOL

**Dave Parse**

Earth Tech, Inc.

675 N. Washington Street, Suite 300, Alexandria, VA 22314

Phone: (703) 706-0508, Email: david.parse@earthtech.com

## Introduction

Earth Tech was tasked with developing a tool to assist in the implementation of remedial process optimization (RPO) at Air Force installations, with the goal of the tool being to inventory remediation systems and long-term monitoring (LTM) programs and to prioritize the systems/LTM programs for future RPO studies. The RPO Inventory and Prioritization Tool will initially be applied at Air Force Materiel Command (AFMC) installations.

## Methods

The RPO Inventory and Prioritization Tool is comprised of the following:

1. Questionnaires to capture relevant RPO data for each remediation system/LTM program;
2. A database to store all RPO data generated from the questionnaires; and
3. Site data sheets that inventory and prioritize remediation systems/LTM programs at an installation and/or a Major Command.

Two types of questionnaires were created to capture the RPO data, including an Initial Questionnaire (see Figure 1) developed in Microsoft Excel and Detailed Questionnaires (see Figures 2 and 3) developed in Microsoft Access. The Initial Questionnaire was designed to capture basic information about a system, including remediation site name, remediation system name, remediation system type, and contact information. The Detailed Questionnaires were designed to capture the data necessary to inventory and prioritize remediation systems/LTM programs. The Detailed Questionnaires were developed by expanding upon the questionnaire the USEPA developed for pump-and-treat systems in ***Groundwater Pump and Treat Systems: Summary of Selected Cost and Performance Information at Superfund-financed Sites*** (USEPA, 2001). While the USEPA questionnaire was designed to only capture data for pump-and-treat systems, the Detailed Questionnaires of the RPO Tool were designed to capture data for most remediation systems typically encountered at Air Force installations (e.g., the Detailed Questionnaire shown in Figure 3 captures data for SVE systems).

In addition to the Detailed Questionnaires, the database and site data sheets were also developed in Microsoft Access. As a result, data inserted into the Detailed Questionnaires are automatically stored in the database, and site data sheets can be automatically generated from the database.

## References

U.S. Environmental Protection Agency, December 2001, *Groundwater Pump and Treat Systems: Summary of Selected Cost and Performance Information at Superfund-financed Sites*, Office of Solid Waste and Emergency Response, EPA-542-R-01-021b.

**Figure 1. Initial Questionnaire**

<b>1. Major Command:</b>	Air Force Materiel Command								
<b>2. Base/Plant Name?</b>	Air Force Plant 4								
<b>3. Number of Remediation Systems at Base/Plant?</b>	5								
<b>4. Is there a Base-/Plant-Wide Long-Term Monitoring (LTM) Program?</b>	Yes								
<b>5. Name/Contact Information for person filling out questionnaire:</b>									
<b>Name:</b>	George Walters								
<b>Address:</b>	Aeronautical Systems Center, Building 8								
	1801 Tenth Street, Suite 2								
	WPAFB, OH 45433-7626								
<b>Phone Number:</b>	(937) 255-1988								
<b>Fax Number:</b>	(937) 255-9985								
<b>Email Address:</b>	George.Walters@wpafb.af.mil								
<b>6. Inventory of Remediation Systems and Base-/Plant-Wide LTM Programs:</b>									
<b>Remediation Site Name:</b>	<b>System/LTM Program Name:</b>	<b>Contact Name / Employer / Phone # / Email Address / Access Version:</b>					<b>System Type:</b>		
Landfill No. 3	Vacuum-Enhanced Pumping System	Rick Wice / Shaw E&I / (412) 858-3309 / richard.wice@shawgrp.com / Access 2000					Dual-Phase		
East Parking Lot	Pump & Treat System	Rick Wice / Shaw E&I / (412) 858-3309 / richard.wice@shawgrp.com / Access 2000					Pump & Treat		
Building 181	Electrical resistance heating system	Steve Fain / URS / (512) 419-5072 / stephen_fain@urscorp.com / Access 2000					Thermal technology		
Building 181	SVE System	Rick Wice / Shaw E&I / (412) 858-3309 / richard.wice@shawgrp.com / Access 2000					Dual-Phase		
Fuel Saturation Area No. 1	Pump & Treat System	Rick Wice / Shaw E&I / (412) 858-3309 / richard.wice@shawgrp.com / Access 2000					Pump & Treat		
AFP4	Plant-Wide LTM Program	Dave Parse / Earth Tech / (703) 706-0508 / david.parse@earthtech.com / Access 97					Plant-Wide LTM Program		

Figure 2. RPO Inventory Data

Remediation System Data Inventory		
1. Major Command:	Air Force Materiel Command	
2. Facility:	AFP 4	
3. Site:	Building 181	
4. Remediation System:	SVE System	
<a href="#">Click to Return to Previous Form</a>		
<a href="#">5. Click to Edit/Add Contacts for the Remediation System</a>		
6. Type of Remediation System?	Soil-Vapor Extraction (SVE)	
7. Legal Driver for Remediation?		
8. Legal Status of Remedy?		
9. LNAPL known to be present?		
10. DNAPL known to be present?		
11. Average Annual Operation and Maintenance Costs (\$/year)?	12. Portion of Average Annual Operation and Maintenance Costs (\$/year) Used Only for Groundwater/Soil Vapor Monitoring?	13. Operation and Maintenance Costs (\$) Over the Past 12 Months?
\$0.00	\$0.00	\$0.00
<b>14. Highlight the Primary COC(s) for the Remediation System</b> Chlorinated Hydrocarbons (e.g., TCE, TCA, DCE, vinyl chloride) Petroleum Hydrocarbons (e.g., BTEX) Semivolatile Organic Compounds Polynuclear Aromatic Hydrocarbons (PAHs) Pesticides/Herbicides Polychlorinated Biphenyls (PCBs) Perchlorates Metals Other		Please provide below any general comments or a brief explanation for any of the above questions that were not answered or were answered "Other"
<a href="#">Click to Edit/Add Remediation System Optimization Data</a>		<a href="#">Click to View Inventory Report</a>

Figure 3. SVE Detailed Questionnaire

Soil-Vapor Extraction	
Major Command:	Air Force Materiel Command
Facility:	AFP 4
Site:	Building 181
Remediation System:	SVE System
<a href="#">Click to Return to Previous Form</a> <a href="#">Click to View Detailed Remediation System Report</a>	
15. Primary Remedial Objective?	
16. When did the System Become Operational (mm/yyyy)?	
17. Expected Completion Date for Remedial Action (mm/yyyy)?	
18. Is there a Documented Conceptual Site Model?	
19. Are the Remedial Objectives Being Achieved?	
20. Has System Effectiveness Been Evaluated?	
23. Number of Soil-Vapor Extraction Wells (In Use)?	0
24. Soil-Vapor Extraction Rate (cubic feet/minute)?	0
25. Estimated Average System Downtime (weeks/year)?	0
<b>Monitoring</b>	
27. Number of Soil-Vapor Wells Regularly Monitored?	0
28. Frequency of Soil-Vapor Monitoring (events/year)?	0
29. Please provide below: [1] average influent and effluent concentrations for the primary COCs; [2] a brief summary of any previous system performance evaluations; [3] any general comments; and [4] a brief explanation for any of the above questions that were not answered or were answered "Other"	
21. Expected Degree of Difficulty in Implementing Minor Changes to the Remediation System? 22. Expected Degree of Difficulty in Implementing Major Changes to the Remediation System? 26. Highlight One or More of the Following Aboveground Treatment Processes: Carbon adsorption Flare Catalytic oxidation None/other/not sure	